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PROBLEMS FOR SOLUTION.

ARITHMETIC.

100. Proposed by CHARLES C. CROSS, Libertytown, Md.

I bought stock at 4% discount, and sold it at 2½% premium, paying a brokerage in both cases of ¼%. If my net profits were $130, what was my investment? (Solve by Arithmetic.)

101. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Irving College, Mechanicsburg, Pa.

A man gained $m=3\%$ on his money, in July; and, in August, lost $n=2\%$. What per cent. of his money July 1st is his money September 1st?

⁂ Solutions of these problems should be sent to B. F. Finkel, not later than November 10.

ALGEBRA.

89. Proposed by G. A. MILLER, Ph. D., Instructor in Mathematics, Cornell University, Ithaca, N. Y.

Solve by quadratics.,

$$x^2+y=7 \ldots\ldots (1).$$
$$x+y^2=11 \ldots\ldots (2).$$

⁂ Solutions of this problem should be sent to J. M. Colaw, not later than November 10.

GEOMETRY.

102. Proposed by B. F. FINKEL, A. M., M. Sc., Professor of Mathematics and Physics, Drury College, Springfield, Mo.

Ohne Benutzung des Cirkels eine Strecke AC zu halbiren, wenn eine Parallele der Geraden AC gegeben ist. [*Reye's Geometrie der Lage*, Part I, p. 191.]

103. Proposed by FREMONT CRANE, Sand Coulee, Mont.

A horse is tethered with a rope which is attached to a stake B on the edge of a circular pond containing one acre. How long must the rope be to allow the horse to graze over one acre? [From *Home Study Magazine*, problem 249.]

104. Proposed by SAMUEL E. HARWOOD, M. A., Professor of Mathematics, Southern Illinois State Normal University, Carbondale, Ill.

To find a point in the circumference of a semi-circumference such that the sum of its distances from the extremites of the diameter shall be a maximum. [From *Wentworth's Plane Geometry*, Ex. 387.]

⁂ Solutions of these problems should be sent to B. F. Finkel, not later than November 10.

CALCULUS.

80. Proposed by B. F. FINKEL, A. M., M. Sc., Professor of Mathematics and Physics, Drury College, Springfield, Mo.

A vessel is anchored in three fathoms of water, and the cable passes over a sheave in